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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/462,493	01/21/2000	TOSHIYUKI MORII	P18963	5153

7590 05/05/2004

GREENBLUM & BERNSTEIN  
1941 ROLAND CLARK PLACE  
RESTON, VA 20191

EXAMINER
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ARMSTRONG, ANGELA A

ART UNIT	PAPER NUMBER
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2654

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/462,493

**Applicant(s)**

MORII ET AL

**Examiner**

Angela A. Armstrong

**Art Unit**

2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-6 and 8-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,6,8 and 10-20 is/are rejected.
- 7) ☒ Claim(s) 4,9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 3, 5-6, 8, and 10-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minde et al (US Patent No. 5,991,717) in view of Ozawa (US Patent No. 5,963,896).

2. Regarding claims 1, 3, 5-6, 8, and 10-20, Minde teaches  
an adaptive codebook in which previously synthesized excitation signals are stored; at  
col. 2, line 64 and col. 3, lines 33-38

a stochastic codebook in which a plurality of excitation vectors are stored, said stochastic codebook having a first subcodebook in which excitation vectors composed of a small number of pulses are stored and a second subcodebook in which excitation vectors composed of a large number of pulses are stored; at col. 7, lines 3-12

obtaining a synthesized speech using excitation information acquired from said adaptive codebook and said stochastic codebook, using LPC obtained by performing LPC analysis on an input speech signal; at col. 2, line 65

obtaining gain information for said synthesized speech using a relation of said synthesized speech and said input speech signal; at col. 3, lines 6-25

Art Unit: 2654

transmitting said LPC, said excitation information and said gain information, as inherent in the speech coder.

Minde et al do not specifically teach executing a voice/unvoiced judgment or calculating the gain of the stochastic codebook to account for the difference in the number of pulses in the codebooks.

Refer to Ozawa (col. 14, line 47 continuing to col. 16, line 21; col. 19, lines 31-55) who teaches a hybrid switched multi-pulse/stochastic speech coding technique, which makes a voice/unvoiced judgment by comparing the frame average pitch gain with respective thresholds, implements an amplitude codebook for implementing the pulse amplitude quantization, and teaches it is possible to obtain positions of any number of pulses with gain variations and to switch codebook circuits or gain codebooks using mode data. Ozawa further teaches the positions of the amplitude pulses are retrieved with a different gain for each group of pulses less in number than the total number of pulses M. Ozawa teaches that implementation of this scheme increases the accuracy of the excitation and improves the performance of the coder (col. 15, line 67 continuing to col. 16, line 3)

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the system of Minde et al to implement voice/unvoiced judgments and providing for gains to account for the differences in pulse in the codebook, as taught by Ozawa, for the purpose of improving unvoiced speech performance in low-rate coders.

***Allowable Subject Matter***

3. Claims 4 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

4. Applicant's arguments filed February 24, 2004 have been fully considered but they are not persuasive. Applicant argues Minde does not disclose or suggest the use of two subcodebooks, namely a first subcodebook storing excitation vectors with a small number of pulses and a second codebook storing excitation vectors with a large number of pulses, a controller that controls a gain for respective excitation vectors in at least one of the first subcodebook and the second subcodebook corresponding to a distance between pulses of excitation vectors in the first subcodebook as recited in the combination of claims 1, 6, 11, 13, and 17. Applicant also argues Ozawa does not recite or suggest this feature of the present invention. Applicant also argues neither Ozawa nor Minde disclose or suggests switching subcodebooks based on a distance between pulses of excitation vectors. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this instance, Minde was cited as disclosing an adaptive

Art Unit: 2654

codebook in which previously synthesized excitation signals are stored in addition to a stochastic codebook in which a plurality of excitation vectors are stored, wherein said stochastic codebook having a first subcodebook in which excitation vectors composed of a small number of pulses are stored and a second subcodebook in which excitation vectors composed of a large number of pulses are stored. Additionally, Ozawa teaches a hybrid switched multi-pulse/stochastic speech coding technique, which makes a voice/unvoiced judgment and implements a method for calculating the pitch gain. The first and second excitation quantizers are switched to obtain desired pulse positions according to a judged mode. The voiced/unvoiced mode determination of Ozawa is based on pulse distances; the distances between the pulses exist via the voice/unvoiced relationship. Thus, the combination of Minde and Ozawa provide support for the claimed stochastic codebook comprising subcodebooks in which a small number or a large number of pulses are stored and a gain corresponding to a distance between pulses of the excitation vectors.

### ***Conclusion***

**5. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 2654

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela A. Armstrong whose telephone number is 703-308-6258. The examiner can normally be reached on Monday-Thursday 7:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (703) 305-9645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Angela A. Armstrong  
Examiner  
Art Unit 2654

AAA  
May 01, 2004

  
RICHEMOND DORVIL  
SUPERVISORY PATENT EXAMINER